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STATE OF MISSOURI
Matt Blunt, Governor • Doyle Childers, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

August 8, 2007

Mr. John DeLashmit
U.S. Environmental Protection Agency
Region VII
901 North Fifth Street
Kansas City, KS 66101

Re: City of Buffalo's State Operating Permit in Lieu of a Total Maximum Daily Load for Little Lindley Creek (WBID 1438)

Dear Mr. DeLashmit:

Little Lindley Creek, near the City of Buffalo in Dallas County, Missouri, was placed on Missouri's 1998 303(d) List of impaired waters for Biochemical Oxygen Demand (BOD) and Non-Filterable Residue (NFR). It was subsequently placed on the 2002 303(d) List for BOD and Volatile Suspended Solids (VSS). The change to VSS was made to better distinguish between organic solids coming from wastewater treatment plants (WWTPs) and mineral solids coming from soil erosion or erosion of mine waste materials or stockpiles. The sole source of these impairments is listed as the Buffalo WWTP, Permit Number MO-0094854. The Missouri Department of Natural Resources (department) has opted to correct these impairments through permit limits in lieu of a Total Maximum Daily Load (TMDL).

Historically, two outfalls have been listed on Buffalo's WWTP permit. However, the storm water clarifier actually discharges, as "Outfall 002," into a manhole where it combines with the effluent from the secondary treatment side of the plant prior to being discharged at Outfall 001. Outfall 001 discharges into a ditch that runs into an unnamed tributary that runs into Little Lindley Creek less than 0.1 mile from the outfall. Little Lindley Creek is unclassified at its confluence with the unnamed tributary. The classified segment starts approximately 0.5 miles downstream from that confluence. As a result, the one-mile segment of Little Lindley Creek that was placed on the 1998 303(d) List included both unclassified and classified portions.

There are no other point source discharges above the Buffalo WWTP and land use in the watershed is mostly agricultural. The listing for the impaired reach was based on visual surveys conducted by department personnel in 1992, 1993, 1994, and 1997 (see enclosed *Stream Survey Data*). During the surveys, personnel observed violations of narrative standards, including objectionable bottom deposits (the narrative criteria for VSS) in the form of thick sludge, discolored water, bad odor, and pollution tolerant (or no) invertebrates below the outfall. In addition to the stream surveys, numerous permit violations were issued to the Buffalo WWTP from 1990 to 1998 for BOD and VSS (the latter listed as Total Suspended Solids (TSS) in the permit).

Following improvements to the system in March 2001, the WWTP met monthly permit effluent limits of 30 mg/L BOD and 30 mg/L TSS in discharges to the creek. In order to assess stream health following the WWTP upgrades, the department conducted a biological and "physicochemical" assessment of Little Lindley Creek in September 2002 and April 2003 (see enclosed *Biological Assessment Study, Little Lindley Creek*). Based on the biological assessment, the macroinvertebrate population was deemed impaired when compared to four reference streams. The department believed the sludge releases from the facility caused the impairment. Additional chemical monitoring (see enclosed Water Chemistry Data – two pages) was conducted in the creek in April, July and September 2003, and BOD was found to be very low in one sample (2.65 mg/L) and not detectable in 27 of the remaining 28 samples. However, VSS continued to be a problem.

During visits to the WWTP in February, May and June 2005, department personnel found significant discharges of sludge (VSS) had been deposited during heavy rains in the ditch receiving outfall discharge, the unnamed tributary, and in Little Lindley Creek itself. In order to address this and other concerns, the permit was reopened, a modification made to it, and reissued on December 2, 2005. The modified permit included two elements not found in the previous permit – instream monitoring for dissolved oxygen (DO), ammonia, pH and temperature and a Schedule of Compliance (SOC). The SOC required that, by January 2006, the permittee submit an engineering evaluation detailing future needs of the WWTP and a plan and modifications necessary to prevent further releases of sludge into the creek. The SOC also required that within 180 days of department approval of the plan, the permittee submit an application for a construction permit to begin implementing newly identified specifications. In January 2006, the department received the engineering report that identified the need for additional sludge holding, correction of sludge handling facilities, increased capacity, disinfection, and other improvements. The required application for a construction permit was subsequently received (and appropriate elements were incorporated into the currently issued permit as discussed later in this letter).

The facility continues to be the sole source of VSS due to their peak flow clarifier (Outfall 002) and inadequate sludge storage. The peak flow clarifier is not adequately removing solids from the influent, and when cleaning is necessary, there is no method for preventing releases of additional solids. The lack of sludge storage means that excess sludge is retained in the treatment train, allowing it to be washed out during high flows.

To replace the permit that expired November 15, 2006, the department issued a new permit to the City of Buffalo on July 20, 2007. The water quality standard (WQS) for VSS will be achieved by continuing to limit the effluent from Outfall 001 to a 45 mg/L TSS maximum weekly average (30 mg/L monthly average), and, most importantly, by eliminating Outfall 002 (the peak flow clarifier). The WQS for DO of 5.0 mg/L will be achieved by continuing to limit the effluent from Outfall 001 to a BOD of 45 mg/L maximum weekly average (30 mg/L monthly average), and eliminating Outfall 002. The permit included a SOC requiring initiation of construction for upgrading the facility by January 1, 2008 and submission of a detailed progress report by January 1, 2009. All upgrades (including elimination of Outfall 002) must be completed by December 31, 2009.

The upgraded facility will include an aeration basin, headwork upgrades, expanded sludge storage, and ultraviolet disinfection. It will also have an expanded peak flow handling capability (4.25 MGD), without compromising secondary treatment, which will result in elimination of sludge releases. The WQS for VSS (under the narrative criteria for unsightly bottom deposits) will be achieved through compliance with standard secondary treatment limits. Eliminating the sludge releases will remove a BOD source from the creek, allow the plant to meet existing effluent permit limits for BOD (which are believed to be protective of WQS), and achieve WQS for DO.

The Missouri State Operating Permit for the City of Buffalo's WWTP is enclosed (it may also be found at: http://www.dnr.mo.gov/env/wpp/permits/wpcpermits-issued.htm). Upgrading the WWTP should result in WQS being achieved in Little Lindley Creek. In order to determine if the impairment has been eliminated post-construction, the department will schedule ambient stream monitoring to confirm compliance with WQS. In addition, the permit continues to include the following monitoring requirement to ensure permit limits are being achieved - once per month instream monitoring ¼ of a mile downstream of the confluence of the effluent and Little Lindley Creek for DO, ammonia, pH and temperature. The permit includes a reopener clause to allow for incorporation of stricter limits if monitoring reveals violations of Missouri's WQS.

With this letter, the department submits the Buffalo WWTP State Operating Permit to the U.S. Environmental Protection Agency (EPA) for concurrence that the permit will serve in lieu of a TMDL on Little Lindley Creek. We appreciate EPA taking prompt action on this matter. If you have any questions, please contact Ms. Donna Menown at (573) 526-1595, via e-mail at donna.menown@dnr.mo.gov, or by mail at Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102-0176.

Sincerely,

WATER PROTECTION PROGRAM

(Signed by Edward Galbraith)

Edward Galbraith
Director

EG:dml

Enclosures

c: Mr. Daniel R. Schuette, Director, Division of Environmental Quality
Mr. Earl Pabst, Deputy Director, Division of Environmental Quality
Missouri Clean Water Commission

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

OCT 3 1 2007

Mr. Edward Galbraith, Director
Water Pollution Control Program
Water Protection and Soil Conservation Division
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

Dear Mr. Galbraith:

RE: Permit Limits in Lieu of a TMDL for Little Lindley Creek (WBID 1438)

This letter responds to the submission from the Missouri Department of Natural Resources (MDNR) dated August 13, 2007, regarding Little Lindley Creek. Little Lindley Creek was listed as impaired on Missouri's 1998 §303(d) list, for Biochemical Oxygen Demand (BOD) and Non Filterable Residue (NFR). It was subsequently placed on the 2002 §303(d) list for BOD and volatile suspended solids (VSS). MDNR proposes to correct the impairments with National Pollutant Discharge Elimination System (NPDES) permit limits in lieu of Total Maximum Daily Loads (TMDLs). The following water body segment is proposed to be corrected through permit limits.

Water Body	WBID	Impairment	Source	Permit #	Year added to list
Little Lindley Creek	1438	BOD VSS	City of Buffalo's waste water treatment plant (WWTP)	MO-0094854	1998

Waters require TMDLs when certain pollution control requirements are not stringent enough to implement water quality standards (WQS) for such waters. To exempt an impaired water from the TMDL process, the pollution control requirements cited in the regulation under 130.7(b)(1)(i), (ii), and (iii) must be established and enforced by federal, state, or local laws or regulations, and be stringent enough that, when applied, the receiving water will meet WQS.

In regards to Little Lindley Creek, Federal regulations at 40 CFR 130.7(b)(1)(ii) provide that where ["more stringent effluent limitations (including prohibitions) required by either state or local authority preserved by section 510 of the Act, or Federal authority (law, regulation, or treaty")] are stringent enough to implement WQS, a TMDL is not required. The Environmental Protection Agency (EPA) has completed its review of this submission, and other previously submitted information supporting this permit in lieu of a TMDL, and concur that a TMDL is not

required for this impaired water body because the impairments are being addressed through more stringent effluent limitations as per 40 CFR 130.7(b)(1)(ii).

The City of Buffalo's WWTP has been identified as the sole source for the BOD and VSS impairments on Little Lindley Creek as a result of surface water monitoring directly above and below the plant. An NPDES permit for the plant was issued on July 20, 2007. The permit includes a schedule of compliance (SOC) to commence by January 1, 2008. Final limits, which will achieve WQS for BOD and VSS, will be imposed through the July 20, 2007, permit with the conclusion of the SOC by December 31, 2009. In review of the permit, BOD and total suspended solids were each set at 45 mg/L maximum weekly (30 mg/L monthly average). Additionally, the permit includes once per month instream monitoring for dissolved oxygen, temperature, pH, and ammonia, ensuring limits are achieved. The permit also includes the addition of permit limits for ammonia and a reopener clause to allow for stricter limits if monitoring shows WQS violations. All upgrades must be completed by December 31, 2009, including elimination of outfall 002. The upgraded facility will include an aeration basin, headwork upgrades, expanded sludge storage, and ultraviolet disinfection.

Enclosed with this letter is the Region 7 4b Rationale Document which summarizes EPA's approval of the permit in lieu of (PIL) a TMDL. EPA believes the separate elements of the PIL described in the enclosed form adequately address the pollutants of concern.

If you have any questions or concerns in regards to this matter, please do not hesitate to contact Tabatha Adkins at (913)551-7128.

Sincerely,

William A. Spratlin
Director
Water, Wetlands and Pesticides Division

Enclosure

cc: John Hoke
Missouri Department of Natural Resources

Phil Schroeder
Missouri Department of Natural Resources

EPA Region 7 4B Rationale

Water body ID(s): MO_1438 **State:** MO
Water body Name(s): Little Lindley Creek
Pollutant(s): AMMONIA, BOD, VOLATILE SOLIDS
HUC(s): 10290107
Basin:
Tributary(ies):
First Listing Cycle: 1998
Submittal Date: 8/03/2007 **Approved:** No

Submittal Letter

State submittal letter indicates final Maximum Daily Load(s) for specific pollutant(s)/water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act. Include date submitted letter was received by EPA and date of receipt of any revisions.

EPA received this submittal with cover letter, final permits, and fact sheets on August 13, 2007.

Concern

A statement of the problem causing the impairment.

The sole source of the impairments is the City of Buffalo's state operating permit (permit number MO-0094854) for the Buffalo wastewater treatment plant (WWTP). Historically the permit has two outfalls listed. The storm water clarifier discharges (outfall 002) into a manhole where it combines with the effluent from the secondary treatment side of the plant prior to being discharged at outfall 001. Outfall 001 discharges into a ditch that runs into an unnamed tributary that runs into Little Lindley Creek less than 0.1 mile from the outfall. In 2005, significant discharges of volatile suspended solids (VSS) had been deposited during heavy rains. The facility continues to be the sole source of VSS due to their peak flow clarifier (outfall 002) and inadequate sludge storage.

Implementation Strategy

A description of the proposed implementation strategy and supporting pollution controls necessary to achieve WQS, including the identification of point and nonpoint source loadings that when implemented assure the attainment of all applicable WQS.

Listing for Little Lindley Creek was based on visual surveys conducted by MDNR. Improvements were made to the system by 2001. A biological and physicochemical assessment study was conducted in 2002-2003. Additional chemical monitoring was conducted late 2003. During site visits conducted by MDNR in 2005, significant discharges of sludge (VSS) were noted. A wasteload allocation (WLA) study was conducted in 2006 setting total suspended solids (TSS) at 30 mg/L (975.8 lbs/d). Biochemical oxygen demand (BOD) and

TSS were each set at 45 mg/L maximum weekly (30 mg/L monthly average). The WLA for ammonia was set seasonally (May 1- October 31, November 1 – April 30) at 3.7/7.5 mg/L daily maximum and 1.9/3.7 mg/L monthly average. These WLAs will ensure the water quality standards (WQS) for dissolved oxygen (DO) of 5 mg/L and the narrative standards for VSS will be met.

The permit was reissued July 20, 2007. A schedule of compliance (SOC) was included. All upgrades must be completed by December 31, 2009 (including elimination of outfall 002). The upgraded facility will include an aeration basin, headwork upgrades, expanded sludge storage and ultraviolet disinfection. There will be expanded peak flow handling capabilities, without compromising secondary treatment, which will result in elimination of sludge releases. WQS will be achieved for VSS, through compliance with standard secondary treatment limits.

Time

An estimate or projection of the time when WQS will be met.

December 31, 2009, all upgrades (including elimination of outfall 002) must be completed. At that time WQS should be achieved in Little Lindley Creek.

Schedule

A reasonable schedule for implementing the necessary pollution controls.

The permit was reissued July 20, 2007. An SOC was included. January 1, 2008 initiation of construction for upgrade of the facility begins. January 1, 2009 a detailed progress report is due. A completion date of December 31, 2009 with all upgrades (including elimination of outfall 002) must be completed.

Monitoring

A description of, and schedule for, monitoring milestones for tracking and reporting progress to EPA on the implementation of the pollution controls.

Ambient stream monitoring by MDNR will be scheduled post construction to determine if the impairment has been eliminated. The permit includes once per month instream monitoring 1/4 of a mile downstream of the confluence of the effluent and Little Lindley Creek, for DO, temperature, pH, and ammonia, to ensure permit limits are being achieved.

Commitment to Revise

A commitment to revise, as necessary, the implementation strategy and pollution controls if progress towards meeting WQS is not being shown.

The permit includes a reopener clause to allow for incorporation of stricter limits if monitoring reveals violations of WQS.

**********Pollution control requirements in the submittal**********

National Pollution Discharge and Elimination System (NPDES)